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Potential and Acquired Static Flat Foot

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The subject for consideration to-day was chosen for a number of reasons. First, because of its prevalence. Second, because of what I consider an increasing prevalence, and finally, because we have to-day at our disposal, a very simple method of not only relieving the symptoms of flat foot, but of anatomically curing the condition. These may sound like strong statements, but I believe that by the time you reach the end of this paper you will agree that they are substantially correct.

Some twenty years ago I became interested in the subject of flat foot. I made a rather long and painstaking study of it. Among the statistics on flat foot, I found, for instance, in Munson's[1] work on Military Hygiene, the statement that out of 9,901 members of the Illinois National Guard, who offered themselves for the United States service in 1898, 33, or 3.3 per thousand were rejected because of excessive or painful flat foot. All of these had previously passed the physical examination required to enter the State Militia. A few years later I wrote a letter to the Surgeon General's Office and obtained the following statistics: During the years 1903, 1904 and 1905, 132,145 men were examined for the United States Army. Of this number 457, or 3.4 per thousand, were rejected because of excessive flat foot. Anyone who has been engaged in examining men for the National Army in the recent draft knows that either one of two things has happened, either the figures above given were too low as an average even twenty years ago, or flat foot has increased alarmingly since then. I think both are a fact. I believe that the figures were too low even for that period because only reasonably able-bodied men offered themselves for the army, and I believe that flat foot has increased tremendously in the last twenty years and is still on the increase and later I will try to explain what produces not only the prevalence, but the ever increasing prevalence.

In support of the fact that the number of cases of flat foot are enormously greater than the figures I have given you we have certain evidence. I served on the Medical Advisory Board for Chicago and vicinity and it seemed to me that every second or third man that came to me for examination had flat feet. We got the border-line cases, to be true. However, other examiners have told me exactly the same thing, namely, that they were astonished at the prevalence of flat foot among registrants. We also have some definite statistics in regard to this matter. These were taken from what I consider an absolutely reliable source.[2] Examinations of the records of 72,410 men for the service of the United States Navy for 1914 shows 76% were rejected. Of the total number rejected, 10.77 per cent were rejected for

[1] Munson: Military Hygiene, page 32.

[2] "Sickness Insurance or Sickness Prevention." National Industrial Conference Board. Research Report No. 6. May, 1918.

flatfoot. Or, in other words 8.22 per cent of the total number examined were rejected for this condition. This is thirty-one times as large a rejection as in 1898, and 1903-1905. It must not be forgotten, however, that previous to our entrance into the war, the Navy was exceedingly rigid in its physical examinations. When the complete statistics of the present war are available we will, I believe, find further statistical evidence of not only the great prevalence of this affection but also of the statement that flat foot has increased astonishingly during the past two decades, even though we must admit that a part of the apparent increase is due to better diagnosis.

One reason why so many mistakes have been made in the diagnosis of this condition in the past is to be found in the faulty nomenclature which has been employed. None of the terms, such as flat foot, weak foot, splay foot, pes valgus, or pes flexus pronatus reflexus of Henke, adequately express the condition. I, therefore, some 12 years ago, in a published article, introduced the word potential, calling the whole symptom-complex potential and acquired static flat foot. The former, the transition stage from the normal to the latter is the most often overlooked and yet many times the more painful and incapacitating, and the stage in which treatment is most effective and a cure most rapidly accomplished.

Definition

Potential flat foot is a weakened condition of the arch due to a disproportion existing between the strength of the foot and the strain to which it is exposed, in which the strain has not been severe enough to break the arch. Acquired static flat foot is an acquired compound deformity in which the foot assumes an abnormal relation to the leg and the bones of the foot abnormal relations to each other. This results in improper distribution of weight and strain, abnormal function and loss of arch.

In order that treatment may be uniformay successful in both types of cases it is absolutely essential that the physician in charge of the case keep constantly in mind certain fundamental facts in reference to the anatomy, pathology, etiology and symptomatology of this condition.

Anatomy and Pathology

The normal shape of the foot is maintained by three distinct factors. First, the shape of the bones, second, the ligaments and fascia and finally the muscles. If a disproportion exists between the weight which is borne and the strength of all of these three factors, the longitudinal arch must give and flat foot must result. The first one to suffer in the development of flat foot is usually the muscles. The ligaments and fascia come next and deformity of the bones last. General muscular weakness predisposes to flat foot, but the tibialis anticus and the tibialis posticus are the two muscles most involved in this condition. If they become weakened or over-stretched, the foot is abducted and everted, the weight of the body is then borne not on the center of the arch, but internally to it and the arch is put to a very great mechanical disadvantage with the result that in extreme cases the relation of the tarsal bones to each other is markedly changed and even their very shapes ultimately become altered.

Etiology

Etiology of this condition may be divided into three main classes. First, relative weakness of the muscles. Second, excessive weight bearing. Third, anything which has a tendency to disturb the proper relation of the bones to each other, such as faulty attitudes and faulty footwear. Anything which causes relative weakness of the muscles, particularly of the tibialis anticus and posticus predisposes to flat foot. Among the most common causes which produce weakness of the muscles may be mentioned, acute and chronic diseases and puberty. It is interesting to note that if the flat foot histories are carefully taken, a large majority of these patients refer their flat foot pains to about the age of puberty. Thus, Royal

Whitman[3] says, 57.3 per cent first come to the physician between ten and twenty-five years of age. Hoffa[4] says, 61.6 per cent between eleven and twenty-five years, while the same author gives 50.7 per cent between sixteen and twenty-five years of age. What per cent of those who come for treatment later developed the symptoms shortly after puberty I have been unable to glean from the literature, but in my experience at least, the great majority state that their first symptoms occurred about or shortly after puberty. F. Peterson[5] explains this fact by the observation that the body constantly gets heavier at this time, the muscles stretch out but do not get correspondingly thicker. Stanley Hall[6] says, virtually the same thing, when he makes the statement that during puberty the different structures grow with different degrees of rapidity causing a temporary increase in weight without corresponding muscle strength. Unfortunately, at just about this period in life many of our young people leave school, begin their life work which often entails excessive weight bearing and excessive fatigue and it is no wonder that they at this time lay the foundation for a condition, which, if not vigorously combated, may impair their usefulness for life. Beginning of the breaking of the arch usually causes a great deal of pain. The patient in order to get away from his pain assumes the "attitude of rest" so well described by Annandale. This throws excessive strain on the fascia and ligaments, which is followed by their stretching causing a subluxation of the bones with a change of their axis and weight bearing surfaces, which must sooner or later result in the change of their shape. Another factor which aids in producing this result is faulty footwear. More particularly the shoes, though even the stockings often play an important role in the production of flat foot. This was very well brought out by John A. Sampson.[7] Since his excellent paper was written many orthopedists have devoted considerable thought and attention to securing proper footwear, but unfortunately their work has not borne much fruit in so far as preventing the mass of the people from being compelled to wear ill-fitting shoes. The shoemakers, as a general rule, both custom and factory, are much more concerned about bringing out a new style of shoe which will result in large sales than in making a shoe which actually fits the foot and which will give the wearer the greatest comfort and efficiency. The shoemakers seem to forget that space has three dimensions and in the manufacture of shoes they actually consider only two, namely, length and breadth. Thus, if a lady buys a 5-B shoe, she gets a size which represents a definite length and a definite width, but which pays no attention to the third dimension, height. As a result, many people who start out with excellent insteps soon suffer from foot trouble because constant pressure is made on the instep from a shoe that is too small at this point. This pressure abducts and everts the foot and if the pressure is allowed to continue long enough, breaking of the arch must follow. This fault is illustrated in figure No. 1, which is a schematic drawing of the relative size and shape of an actual shoe and the cast of a foot upon which the shoe has been worn for many months. This shows to what a needless strain this foot had been placed for a long time. Physicians tell us that action and reaction are equal and in opposite directions. Feet, which, year after year have to break in shoes which are too low over the instep will sooner or later be themselves broken at this point. Then, to make the bad condition worse, along comes the shoemaker with his cure-all arch supports. While arch supporters sometime relieve flat foot pains they never cure flat foot simply because they relieve the tibialis anticus and

3 A Treatise on Orthopedic Surgery.
4 Orthopaedische Chirurgie, 1902.
5 Zum Mechanismus des Platt Fusses, Arch. klin, Chir., lxix.
6 Psychology of Puberty.
7 Proper Foot-wear and the Treatment of Weakened and Flat Feet by Mechanical Devices for Maintaining the Adducted Position.

Figure I. Illustrates common disproportion in foot and shoe. Dotted line, outline of foot; solid line, outline of shoe.

posticus muscles from all function, thus causing still further atrophy of those muscles, and in addition they have a tendency to accentuate the faulty position by favoring abduction and eversion. If arch supporters are worn before flat foot has developed, they have a tendency to actually produce flat foot and the common wearing of arch supporters is, I believe, the principal reason why flat foot is so on the increase. There is a commercial reason why arch supporters are so commonly worn. Some months ago I had occasion to step into one of our large shoe stores to see the manager on some business. While waiting for this gentleman fifteen minutes I spent the time critically watching the shoe salesman. Practically every time when the salesman had sold a pair of shoes, he suggested to the customer that he ought to wear arch supports. In a very considerable per cent of the cases the customer was actually persuaded to purchase them. When the manager finally arrived and my business with him was finished, I casually remarked that I observed that his salesmen were selling a large number of arch supports and asked him why they were doing it. He looked at me rather sheepishly and answered that as a matter of fact their profit on arch supports was nearly as large as on shoes, and that the capital invested was much less and as a rule it took much less time to sell a pair of arch supports than a pair or shoes. The whole matter was evidently on a purely commercial basis, caring little or nothing for the welfare of the customers. I understand that this is a prevailing custom in most of our large shoe stores. If so, it will be absolutely necessary to educate our people and teach them the baneful effect of arch supports, otherwise, our American public is going to suffer more and more from flat foot. The first thing that will be necessary, however, is to educate our orthopedic surgeons not to prescribe arch supports, for as long as they continue to do this, the practice will have a standing in court, and shoe salesmen a legitimate excuse.

Symptomatology

Some of the first symptoms that the patient complains of in the development of flat foot are cyanosis, coldness, numbness, sweating of the feet, fatigue on the slightest exertion and general ill-defined discomfort. These symptoms are not only the first to develop, but often the first to disappear when the proper treatment is instituted. The first and never failing sign is an outward deflection of the tendo Achillis, a sign first described by Helbing.[8] If the patient is directed to stand on an elevated platform with his back toward the examiner, this sign will be found in every case of flat foot, even in its earliest incipiency, as I illustrated in Fig. II. Another early sign, is the tendency these patients have to assume the "attitude of rest," so well described by the great English surgeon Annandale, This attitude is assumed unconsciously in the hope of relieving the tired muscles and throwing the strain upon the bones and ligaments. The oftener it is assumed, the more pronounced will become the peculiar abduction and eversion of the foot with the ultimate breaking of the arch, as illustrated by the flat foot imprints. Well-made imprints of the sole of the foot are sometimes of help

[8] Aus dem Gebieten der Ortho. Chir., March 27, 1905, p. 368.

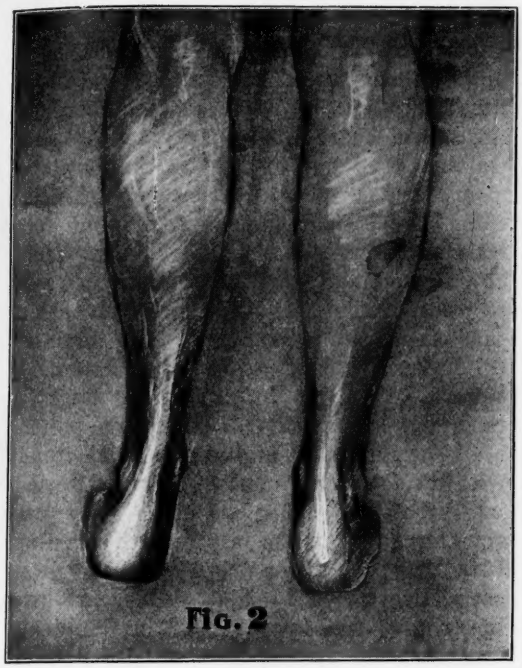

Figure II. Illustrates Helbing's sign, showing lateral deflection of left tendo Achillis one of the first signs of flat foot.

in making a diagnosis and always of interest in watching the progress of the condition, but we must not forget that there is no direct relation between the sinking in of the arch and the severity of the symptoms or the degree of disability. A beginning flat foot may be so painful as to utterly incapacitate the patient from all work and yet show no loss of arch. We must ever remember that "flat foot is a compound deformity in which the abnormal relation in foot and leg, causing the improper distribution of weight and strain and disuse of normal function, is of vastly greater importance than the depression of the arch which has given the name to the disability."[9] A copy of the now classic Volkmann flat foot imprints is introduced here, Fig. III., not so much for the purpose of urging its use in making a diagnosis of the condition as to emphasize what has just been said, namely, that a beginning flat foot such as would make imprint B, may be much more painful than a fully developed flat foot such as would make imprint D, or even a potential flat foot, the imprint of which may not differ in the least from the normal imprint A, may cause much more discomfort than a fully developed flat foot, imprint D. The making of flat foot imprints is especially urged because it will demonstrate as nothing else can, the progressive improvement in the condition as the treatment continues.

If the factors producing the tendency to flat foot are not relieved the fatigue and discomfort above alluded to will become actual pain. The pain can ususally be analyzed as occurring in one or more of the following seven places, namely:

(*a*) Where the tuberosity of the scaphoid and the head of the astragalus make pressure on the calcaneo scaphoid ligament. In severe cases, a bursa may even form here, which may become inflamed and even suppurate and the pain at this point may become excruciating.

(*b*) Mid-dorsum of the foot where scaphoid impinges on the neck of the astragalus.

(*c*) On the outer surface of the foot where, because of the rotation, the external malleolus rubs against the astragalus.

(*d*) Planter surface of heel. This point of pain has often been mistaken for a gonorrheal periostitis. While gonorrheal periostitis has occurred here occasinally,

Figure III. Illustrates reproduction of Volkmann's flat foot imprints showing: (a) Imprint of normal foot; (b) Begginning flat foot; (c and d) Terminal conditions.

[9] A Treatise on Orthopedic Surgery.

the pain at this point is much more frequently due to flat foot than to gonorrhea.

(*e*) At metatarso-phalangeal junction or Morton's pain, because we sometimes have the breaking of the longitudinal arch complicated by a breaking of the transverse arch.

(*f*) Pain in thighs, hips and back. Not infrequently, these flat foot lumbar pains are wrongly diagnosed and unsuccessfully treated as lumbago.

(*g*) Calf pains due to spasm of calf muscles.

I have repeatedly had patients come into my office with crutches and canes, who have been unable to follow their vocations in life for months and even years, who, on careful examination were suffering from nothing more serious than flat foot.

These pains as well as the changed relations of the bones of the lower extremity result in a peculiar gait of the flat foot patient. In the early potential cases, the patient usually walks gingerly as though his shoes hurt him. In the later cases when the feet are markedly everted and abducted and the muscles spastic, the patient acquires a very peculiar gait utterly lacking in elasticity, with his feet held rigid and all of the motion taking place in the knees and hips.

Treatment

The treatment can be taken up under two main headings, Prophylactic and Curative. With this proviso that the prophylactic measures practically all come under the curative remedies also. As in many other medical problems, prophylaxis is the most important and if people were better informed about prophylaxis, the treatment of flat foot would rarely become necessary.

In order to prevent the development of flat foot, the general hygiene must, of course, be looked after. Alternate periods of exercises and rest must be provided. Excessive strain, such as excessive weight bearing or long continued standing in a faulty attitude must be avoided, especially at the age of puberty or after an acute or debilitating illness. Obesity, if existing, should be corrected. All persons should be taught how to stand and walk properly, proper shoes should be provided and arch supporters should be absolutely tabooed. As stated above, improper standing and walking has much to do with the development of flat foot. Hence, every school child should be taught how to stand and walk and every flat foot patient must learn how to walk and stand properly if they are to recover. There is a false idea prevalent that toeing out is graceful. This common belief has its origin to a large extent, I believe, in the old Infantry Drill Regulations of the United States Army, which read, "the recruit at attention must stand with his feet turned out equally and forming with each other an angle of about sixty degrees." I am informed that recent Infantry Drill Regulations conform to a suggestion which I made twelve years ago in a published paper on this subject, namely, "that the recruit at attention stand with his feet turned out equally and forming with each other an angle not to exceed sixty degrees." This gives the soldier a chance to use his feet to the best mechanical advantage. The old drill regulations unquestionably favored abduction, eversion and faulty weight bearing, which, if persisted in is almost sure to produce flat foot. In addition, people should be advised to walk with their feet parallel. I have watched very carefully and so far have never come across a patient suffering from flat foot who habitually stood and walked with his feet nearly parallel. Recently, I asked a very intelligent, observing, highly educated layman, who had spent many years as a buffalo hunter among the Indians, whether he had ever seen an Indian with flat feet and he very promptly answered, "no." I followed the first question by the word, "why," and he promptly answered, "because they do not wear shoes and because they walk with their feet parallel."

This brings me naturally to the question of footwear. Stockings that are either too short or too tight over the instep

should be scrupulously avoided. Shoes should fulfill the following requirements. They must have the proper length, the proper width and the proper height over the instep, and the treading surface must be ample in order that the circulation of all of the structures of the foot may not be impaired and that the foot muscles may have sufficient room for exercise. The internal border should be a straight line, the widest part of the shoe should correspond with the widest part of the foot, namely, the ball. The heel should be placed slightly forward and inward as illustrated in Fig. IV. Finally, the shoe should be as comfortable the first day it is worn as the day it is discarded. About the only way to get such a shoe is to have one made from one's own private special last, made after a Plaster-of-Paris model of the foot with the foot held in slight adduction and supination. The extra original expense is slight and the money expended for this purpose well invested, because such shoes will wear nearly twice as long as shoes which do not fit. If a new shoe has to be broken in it not only wears out much quicker, but at the same time breaks the foot. I hope the time will come when a well-dressed man will no more think of buying custom-made shoes than of going to a department store and buying a suit of ready-made clothes. Well-fitting shoes mean much more to his health and efficiency than well-fitting clothes.

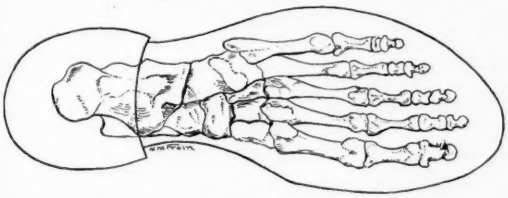

Figure IV. Illustrates proper shape of shoe.

When a flat foot has actually developed, the treatment just outlined must be supplemented by still further remedies, one of the most important of which is, suitable physical exercises which will improve the general muscular development and especially the development of the tibialis anticus and posticus muscles. This can best be accomplished by prescribing properly selected definite physical exercises. Simply telling the patient to take more exercise is about as useless as telling him to take medicine. Unless the direction is definite as to the kind and amount, the patient makes a few unsuccessful attempts and then gives up in despair. If the directions are exact, I have found the patient very willing and glad to follow them to the letter, more especially as they soon experience great benefit from them. For this purpose I published a little book entitled, "Physical Exercises for Invalids and Convalescents," by C. V. Mosgy & Co., which I have found very helpful in my work with these patients. In addition, I direct them to take the following exercises, first recommended by Hoffa, I believe, five times in the morning and five times in the evening. With bare or stocking feet, sitting in a chair, the knee half flexed, have them go through the following motion with each foot, in, up, out, down, with the emphasis on the In and the Up.

I now wish to call special attention to the method of strapping, which I have used in all my cases during the past twenty-one years. I go into considerable detail as I am thoroughly convinced that the success of the method depends very largely upon the accuracy with which these directions are followed. The directions have but one object and that is to use the adhesive plaster to the greatest advantage. A system of strapping which utilizes, say ninety-five per cent of the adhesive quality of the plaster is many times more effective than a method which utilizes only seventy-five per cent.

First, I select a good make of zinc oxide adhesive plaster in twelve inch rolls. I then measure the patient's leg and mark off the adhesive straps according to the length of the extremity. For the purpose of strapping an adult male patient's foot of ordinary size, I mark off seven strips 1-2 inch wide by 32 inches long with a cross-line at the middle, fourteen strips 1-2 inch wide by 8 inches long, one strip

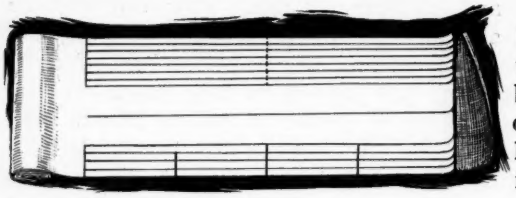

Figure V. Illustrates the method of marking the adhesive plaster preparatory to strapping.

1-2 inch wide by 16 inches long, as illustrated on Fig. 5. I do this as a matter of convenience and also to prevent unnecessary handling of the plaster after the facing is once removed. Plaster can easily be robbed of one-half of its adhesive strength by handling it a few times with perspiring, oily hands or by sticking it onto a dusty wall or by allowing it to come in contact with particles of cotton. Having the strips only 1-2 inch wide is a great importance. Many men fail because they use the adhesive strips too wide.

The heel of the patient's disrobed foot is now placed on a chair, the knee flexed and with a short hard roller bandage looped around the foot I direct the patient to draw the toes upward, thus placing the foot at a little less than a right angle to the leg, at the same time having it moderately inverted and adducted, as illustrated in Fig. 6. I find, that as a rule, the patient

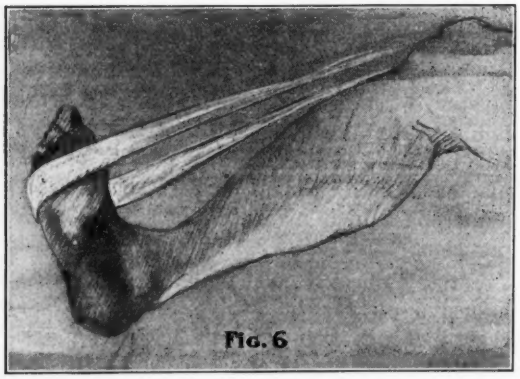

Figure VI. Illustrates method of holding foot during strapping.

himself can do this much better than any assistant. Sometimes it is desirable to have an assistant grasp the foot and help the patient invert and adduct it.

I now place the middle of a thirty-two by one-half inch strap over the bottom of the heel about one inch from its posterior border, place one-half up the outer surface of the leg without tension and the other half up the inner surface of the leg applying this as taut as I can. I then place one of the short, narrow straps on the inner surface of the foot parallel with the sole and one on the outer surface. The remaining long and short straps are now applied alternately in the same manner, each one slightly over-lapping its predecessor, as illustrated in Fig. 7. When these are all

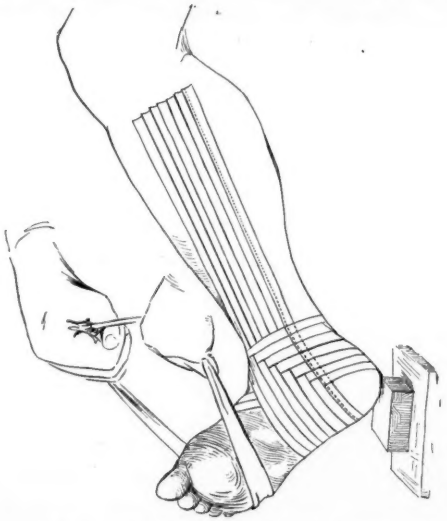

Figure VII. Illustrates method of applying long and short 1-2 inch strap.

in place, I cover them with transverse straps 3 1-4 inches wide beginning at the top and over-lapping about a quarter, as illustrated in Fig. 8. I am very careful, however, not to permit these transverse straps to meet posteriorly. On a number of occasions I have seen surgeons strap flat feet ostensibly according to my plan but completely defeating their object by putting the transverse straps circularly around the limb, thus, frustrating the purpose of the whole procedure, namely, a regeneration of the tibialis anticus and posticus muscles. These straps will remain in place and be effective for from four to eight weeks when they may be removed in the evening either with benzine

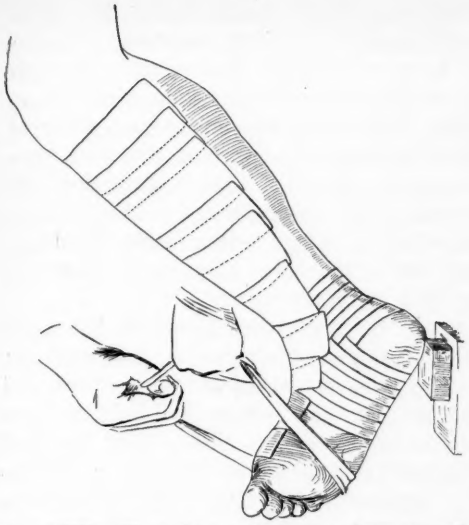

Figure VIII. Illustrates method of applying transfer straps.

or with cold cream, the foot washed with soap and warm water, carefully dried, and restrapped the next morning. This can be repeated until a cure is obtained, which may require from two to ten strappings. The relief is almost immediate, and many a patient has returned for a second strapping already relieved of many of his symptoms.

Prognosis

Though never fatal it causes much discomfort, frequently considerable pain and often not a little incapacity varying in degree from slight temporary functional impairment to more or less permanent disability, however, by following the treatment above outlined, a symptomatic cure may be expected in every case and even an anatomic cure in a very large per cent of the cases. In over twenty-one years of experience with this method of treatment I can say that I have never failed to relieve a patient if the treatment has been persisted in for a reasonable length of time and because the patients get such great relief from the treatment from the very first they are practically all willing to adhere to the treatment until they are cured. Many of these patients actually develop a normal instep, as illustrated in Fig. 9. Just exactly how the adhesive straps accomplish this is a little difficult to say. They undoubtedly support the arch as can be easily demonstrated by applying them to a case of marked flat foot.

Figure IX. Illustrates re-establishment of arch. Upper imprints taken before treatment was begun. Lower imprints of same feet taken after straps had been worn three months.

If properly applied, they tend to supinate and adduct the foot. They relax the peronei muscles, thus, over-coming spasm, securing rest, and relieving pain. They furnish massage to the extremity with every step and consequently favor the regeneration of the muscles and ligaments. They furnish this massage continuously without expense to the patient, and we know that properly given massage is one of the most valuable remedies in restoring tone to over-tired, over-stretched, atrophied muscles.

This in breif, is the argument and evidence in favor of the treatment above outlined, a method of treatment which has given excellent results in my hands, which I consider simpler and more effective than any other method heretofore employed.

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Dehydrated Meat

The new process of dehydrating meat, it is claimed, does not coagulate the protein and thus render the meat unpalatable. The water is all removed and the product is rendered sterile and can be kept indefinitely.

The Acute Abdomen

W. E. MOWERY, M. D., Salina, Kansas

Read at the Annual Meeting of the Kansas Medical Society held at Ottawa, Kansas, May 7 and 8, 1919.

The symptoms are pathological changes found in the acute abdomen may result from injury or the sudden onset of some primary disease, or from a sudden change in some condition which may be more or less chronic, and may be classified as resulting from one of five conditions.

1. In order of their frequency from infections and inflammatory changes.
2. Foreign bodies and new growths.
3. Misplacements and torsions.
4. Interference with the nerve or blood supply.
5. Injuries.

The conditions found under the first classification, of infections and inflammatory changes, are: Appendicitis, cholecystitis, choledochitis, diverticulitis (Meckle's and colonic) pancreatitis, ulcerations (gastric, duodenal and typhoid), abcesses (hepatic, pancreatic, splenic, phrenic lymphatic glands and in the wall or mesentery of the gut), peritonitis, especially tubercular, pelvic cellulitis, gastric crisis of tabes and acute gastritis.

The conditions found under our second classification, of foreign bodies and new growths, are: Renal and hepatic calculi, interoliths, impactions, worms and hydaticl cysts, foreign bodies (which have been swallowed or introduced through the rectum), sarcoma, carcinoma, cysts, fibroma, polypi, hypernephroma, hydronephrosis, cicatricial bands or adhesions, ectopic gestation, and mechanical obstruction.

The conditions found under our third classification, of misplacements and torsions, are: Hernias, volvulus, intussusceptions, torsion of the omentum, floating kidney, torsion of cysts or fibroids, and mechanical obstruction.

The conditions found under the fourth classification, of interference with the nerve or blood supply, are: Adynamic or dynamic ileus, dilatation of the stomach, infarcts, emboli or thrombosis and hemorrhage.

The conditions found under the fifth classification, of injury, vary according to the injury received. The acute pathological changes and resulting symptoms are so closely related and overlap to such a degree that they may be a part of the same process in any or all of the classifications. It is, therefore, necessary to study them somewhat in detail under each classification, and at the same time make allowance for their overlapping.

Acute infection any place in the body always produces three cardinal symptims: than is, pain, elevation of temperature, and leukocytosis, and when the infection occurs in the abdomen, three other cardinal symptoms can be added. They are: Vomiting, muscular rigidity and tenderness. The presence of these six cardinal symptoms, their severity, the relation of their onset and their persistence, coupled with the history of the case together with a careful physical examination, will usually lead to the correct diagnosis.

The first symptom of appendicitis and diverticulitis is plain, sudden in onset, quite severe, at first diffuse, but soon becomes localized. The pain does not entirely remit, but may be described as wavy in character.

The second symptom usually, but not always present, is vomiting, is not very profuse, and never continues to be repeated more than three or four times in an uncomplicated case.

The third symptom is muscular rigidity, at first somewhat generalized, which becomes localized within a few hours.

The fourth symptom is tenderness, quite frequently elicited over some remote part of the abdomen, but becomes localized over the infected organ within a short time.

The fifth symptom is a slight elevation of temperature which is always present during some stage of the disease, and should be taken per rectum in order that it does not pass unnoticed.

The sixth symptom is leukocytosis, which is usually quite marked and of the polynuclear variety.

The first symptom of a perforating ulcer is also pain, which is sudden in onset, but it is more severe than the pain of appendicitis. It is the most painful and persistent of any acute abdominal condition, and does not become localized early. The vomiting, while not always present, is frequently more vigorous and persistent than the vomiting of appendicitis. The muscular rigidity is greater and more extensive, and masks to a certain degree the tenderness. The tenderness remains more or less generalized, and the patient may be more tender over some remote organ than he is directly over the affected organ. The patient assumes a rather characteristic posture, and will not move or permit you to move him from this particular position. The temperature is normal or subnormal at the onset, and the patient may show signs of collapse. There is no leukocytosis until later, when the peritoneum has become inflamed there is both a rise of temperature and leukocytosis. The pulse is frequently found to be very slow in the early stages of perforation, and coupled with the foregoing symptoms, is a very valuable finding.

The symptoms of pancreatitis simulate a perforated gastric ulcer so closely that it is sometimes impossible to draw a line between the two before the abdomen is opened. However, in pancreatitis, vomiting is more profuse and frequently the patient vomits a large amount of blood. On opening the abdomen, there are spots of fatty necrosis found in the omentum.

The symptoms of abscess formation in a place in the abdomen are more gradual in onset. The temperature is the most constant symptom and is irregular; pain is usually not very severe and sometimes conspicuous by its absence. Palpation and thorough X-ray examination will usually locate the trouble. In pyonephrosis ureteral catheterization is a very valuable diagnostic procedure. Tubercular peritonitis is gradual in its onset, produces slight temperature and no leukocytosis. Its most attractive symptom is the accumulation of large quantities of acitis. Salpyngitis and pelvic cellulitis are perhaps more easily diagnosed than any of the other conditions. They are usually the result of gonorrhea or miscarriage; are accompaned by profuse vaginal discharge, and are easily palpated on examination.

Cholecystitis and choledochitis do not produce marked acute symptoms unless they are accompanied by stones.

Gastritis is mentioned only as a matter of thoroughness and produces no difficulties in diagnosis. Gastric crisis of tabes is not to be feared so much as a dangerous condition as it is to be feared from its cunning ability to lure the surgeon into useless abdominal operation, when it should have been diagnosed instead of operated.

Foreign bodies produce their acute symptoms only when some sudden change has taken place within them or in their surroundings. Hepatic and renal calculi become acutely symptomatic, and there is an effort on the part of nature to expell them.

The symptoms of gall stones are frequently confused with appendicitis or perforating ulcer. The first symptom like the other two conditions is pain. It is intermittent in character, more severe than appendicitis, and approaches the pain of perforation, but the pain of a perforation occurs only once. There is not a history of previous attacks, as is most frequently the case with gall stones. In gall stone colic, the patient is suddenly seized with paroxysms of pain which may last from a few minutes to several hours, feels a little tired and sore after the attack has subsided, may run a little temperature, but is usually back at work the next day, which is entirely different from either appendicitis or perforation.

Renal calculi produce a class of symptoms quite similar to gall stone colic, but the pain and tenderness is confined to the kidney region and radiates over the course of the ureter to the groin. These conditions are neither one accompanied by fever or leukocytosis at the outset. The X-ray is of very little value in locating gall stones

but coupled with proper radiograms of the ureters and kidneys, is the most positive finding in renal calculi.

Interolyths, impactions and worms rarely produce symptoms except of intestinal irritation, and occasionally, obstruction. However, I have operated a case under the diagnosis of appendicitis and found the irritation in the appendix due to pin worms. Foreign bodies which are swallowed, or introduced through the rectum, produce symptoms in proportion to the damage they do, and are of interest most often as curiosities.

Sarcoma and carcinoma, do not produce acute symptoms, except those of obstruction, infection, or hemorrhage.

Cysts and fibromas may produce symptoms from infection, obstruction or hemorrhage, but most usually from a torsion of their own pedicles, which produces actue pain and vomiting without an early rise in temperature, or an increased leukocytosis. Most frequently they are easily palpated, and are perhaps more often diagnosed after the abdomen is opened, since all surgeons and laymen alike rarely delay operation when they can feel a tumor. This does not necessarily mean that the urgencies in these cases demand operation, but there is a tendency on the part of everybody to pluck the tumor. Hypernephroma and hydronephrosis present no difficulties in modern methods of diagnosis.

Cicatricial bands and adhesions concern us in the acute symptoms they produce by interference with the onward movement of the bowel contents, and will be discussed later under "Obstruction of the Bowel." Ectopic gestation can hardly be confused with any other condition except a twisted ovarian cyst, accompanied by normal pregnancy.

Misplacements and torsions produce symptoms in four different ways: first, reflex action; second, tension; third, pressure, and fourth, strangulation.

Hernias, volvulus and intussusception produce acute symptoms of obstruction. Obstruction of the bowel, for practical purposes is best classified into mechanical and paralytic. Mechanical obstruction is of two kinds, obturation obstruction and strangulation obstruction, and is produced by hernia, volvulus, intussusception, cicatricial bands or adhesions, foreign bodies, and new growths. Paralytic obstruction is produced by infections or toxemias, interference with the nerve supply, which may be direct from injury of the cord or the afferent nerves; or reflex action, from diseases or injuries of the chest, neck, other abdominal organs, or extremities; and interference with the blood supply is produced by injury, thrombosis or emboli in the mesentery vessels.

The first symptom of a mechanical obstruction is pain, sudden in onset, severe and colicy in character.

The second symptom is vomiting, which is persistent, and gradually increases as the disease wears on. It is first mucus and watery fluid, which becomes more profuse and darker until it finally takes on what we have termed fecal vomiting. It is of the projectile type. Distension does not begin early, but is always present as the third symptom. It is sometimes possible to outline this distension above the obstructed bowel with flatness below. There may be a number of small bowel movements, especially in obturation obstruction, which will throw us off our guard unless this is kept constantly in mind, but usually there is no bowel movement after the bowel is emptied below the obstruction and very little gas is expelled.

In intussusceptions, there is frequently severe and bloody diarrhea. This also occurs in paralytic ileus, produced by embolus or thrombosis of the mesentery artery. A valuable point in differentiating these two conditions is that intussusceptions occur in children while obstruction of the mesentery artery occurs in adults, most frequently between the ages of 25 and 35. The temperature remains normal or subnormal until the disease has progressed to the stage of absorption of toxins from the obstructed bowel. Borborygmus is periodical and in time with

the colicy pains, and produces a rather loud explosion or noise when it strikes the obstruction. It is very readily heard with the stethoscope and is a very valuable differentiating point between mechanical and paralytic obstruction.

We are frequently able to outline a mass by palpation. It is of importance to always remember that a physiological dose of morphine will completely mask the symptoms of an obstruction, for six or eight hours, and may delay the diagnosis until it is too late to give the patient surgical relief.

Paralytic ileus is more gradual in its onset and presents as its first symptom distension of the bowel, followed by vomiting which is of the gulping type. The vomiting progresses as the disease advances, until it is finally of the same character as the vomiting of mechanical obstruction, except the gulping type usually remains throughout the disease. The abdomen is generally and evenly distended. There is no mass that can be outlined, little if any tenderness, and there is a complete absence of pain until the distension has progressed far enough to produce traction upon the mesentery. There is usually complete inability on the part of the patient to obtain either bowel movement or passage of gas. These conditions, however, are often amendable to treatment and the patient's condition in place of rapidly progressing downward, suddenly takes on a new feature and is completely relieved by medical treatment. Dilatation of the stomach is a part of the same process as paralytic ileus and deserves no further discussion. Internal hemorrhage presents no unusual difficulties in diagnosis, and the relief obtained depends upon the causative factor and the condition of the patient.

Infarcts, so far as I know, are diagnosed by the pathologist and are rarely recognized before he acquires the specimen.

The symptoms that are produced by injury must necessarily be in keeping with the extent of the injury and the organs involved, and cannot be discussed in the scope of this paper.

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GENERAL PSYCHIATRY FOR THE GENERAL PRACTITIONER

2. Mental Disease After Influenza

(The Effect of Influenza on the Human Mind)

KARL A. MENNINGER, M. D., Topeka

The effect of influenza on the human body in the production of the primary illness, and the various secondary manifestations such as the dreaded pneumonia, pleurisy, empyema, eye and ear maladies, etc., is quite familiar to millions of people all over the world today. A terrible familiarity was achieved as a result of the ravages of the epidemic of 1918-19. In the wake of the epidemic there were, all told, millions of deaths to say nothing of the prolonged complications of other sorts —such as those just mentioned.

In addition to these, however, one of the most disastrous results of influenza is one of which little is known or spoken either by the people or by the physicians, and neither in medical or in news publications. This is the havoc wrought upon the human brain by the poisons of influenza. For it has been known for hundreds of years that influenza was possessed of an exceptionally powerful brain poison. In the description of an epidemic in Germany in 1385 there are mentioned cases of mental disease wrought by it.[1] It is, moreover, familiar to innumerable sufferers from influenza in the recent epidenmic that the illness is followed by a long period of nervous and mental disquietude, irritability, lassitude, or depression. A noted Scotch brain specialist (Claustron) of thirty years ago wrote it as his opinion that "the whole moral tone of Europe was lowered" by the epidemic of the years 1890-1892. It seems not unlikely that the great financial panic of 1893 was at least indirectly due to the depressing effect of the preceeding three years of influenza, and the mutual loss of

[1] Schnurrer, Chron. der Seuchen., t. I., par 352; 1385.

confidence and enthusiasm which it is well known to produce.

But, in addition to these mild nervous and mental effects, influenza deals much heavier blows to some of its victime. All manner of "nervous" diseases are observed subsequent to it. Spinal cord diseases of many sorts occur, and diseases of the peripheral nerves as well. In common language these are called, or rather miscalled, all sorts of names such as neuritis, palsies, shakes, etc. Far more varieties of trouble occur than any common names have been invented for.

But by far the most serious of all the nervous and mental sequellae of influenza are the severe cases of mental disease produced. These are what are popularly but erroneously called "insanities." First of all it should be remembered that there is no such disease or symptom as insanity. This word is a legal word, and not a medical word at all. It simply means that the judge of the probate court of the county in which the person lives finds such a person sick enough mentally to be cared for and detained by the state. The word is not used (correctly) by doctors, but by lawyers. It would be very fortunate if it were dropped from our language entirely.

But what is meant usually when the average man speaks (erroneously) of "insanity" is some form of mental disease, which may or may not be a case of insanity, according to the decision of the probate court. And it is of these mental diseases, of which there are many sorts and kinds, that we are speaking now. Influenza called forth many cases all over the world. No one not directly interested in such affairs would suppose how numerous these cases have been. As a matter of fact there is no definite knowledge as to just how numerous they have been, but approximate estimates are possible. These are as follows:

Grouping all forms of mental disease together there were nearly two hundred such cases in one mental hospital in Boston. This hospital is fed by a territory of between one and two million people. On the basis of the fact that there are many private hospitals and one state hospital in the same district, we may quite fairly take the lower figure. On this basis, if two hundred cases are brought to one hospital from a population of 1,000,000, there are throughout the United States, with its population of 100,000,000, some twenty thousand cases taken to state hospitals. However, since the grippe was much worse in the East than elsewhere, we will discount this 50 per cent making 10,000 cases. It is estimated that probably less than one half of the cases of major mental disease ever get to state hospitals and hence there were perhaps some twenty thousand cases of influenzal mental disease in the past six months in this country.

This means that throughout the United States there were probably about as many cases of mental disease as there are inhabitants of Pittsburg or Salina. This frightful number should be modified somewhat for the reason that undoubtedly some of these cases would have developed with or without the added effects of influenza. Nevertheless there is no telling what proportion this would be, and there is also no doubt but that influenza was the direct cause of thousands and thousands of these cases.

On this same statistical basis there would seem to have been in Kansas, in the past six months, about 400 such cases. This does not include thousands of milder cases. In the Topeka Daily Capital last winter appeared an article from an authoritative source stating that influenza, having filled to running over all the general hospitals during the epidemic, was thereafter filling in the same way all the state hospitals. This was literally true, as all of the state hospitals received a marked increase in the number of admissions, many of the cases directly and avowedly the result of influenza. The number of such admissions at the Topeka State Hospital was much less than 100, according to an approximate estimate given by Superintendent L. M. Perry to the writer, but in addition to these, of

course, there are to be considered those admitted at Osawatomie, Winfield, Parsons, etc., and the cases treated in private hospitals and sanitariums, and finally those kept at home.

These figures while probably inaccurate are important for this reason. It is generally recognized and expected that the coming winter will see a second wave of the epidemic of influenza. Such has always been the history of influenza epidemics. And such being the case, it will undoubtedly be followed in turn by another wave of mental disease. Now if anything like the same incidence occurs, the number of mental cases will far exceed present facilities for their care and treatment.

So much for statistics, estimates, and prophecies. It is sufficient to say that the importance of influenza from the standpoint of mental disease is apt to be underestimated. Yet probably every medical practitioner in Kansas saw at least one case last winter, and will no doubt see more cases again this winter. The immediate question asked by the thinking physician is *what form of mental disease ("Insanity") is it that follows influenza?* and *What shall we do for these cases?*

To briefly answer the first question is the purpose of this paper. The article for next month proposes to answer the second, but it is important to remember that since *treatment* depends upon *diagnosis*, the latter comes first. Hence this preliminary paper on diagnosis.

It is essential that we keep in mind that mental diseases are of distinct types and names just as are physical diseases. We are eager to differentiate diseases of the body as heart disease, hepatic disease, vermiform disease, and just so diseases of the mind are to be differentiated and the treatment and prognosis made accordingly. It is a singular fact that the same man who will be meticulously painstaking in deciding whether a lesion is of the mitral or the aortic valve will ruthlessly class all mental syndromes together as "insanity" as if that were of any value to him or to the patient!

And yet one cannot infer that the mental diseases subsequent to influenza are deserving of the appelation "influenza psychoses" as if that were as distinctive as "typhoid spine" or "malaria spleen." For as matter of fact, *there is no influenza psychosis.* The importance of this fact will become more and more apparent. The Influenza is followed not by *a specific one form* of mental disease, but by *many forms* of mental diseases, and it is absolutely necessary to determine which sort, which form or type, one has to deal with. The medical practitioner would be aghast were it an acknowledged practice to treat pneumonia, empyema, pleurisy, otitis media, erysipelas, arthritis, tonsilitis, conjunctivitis and all the various other complications of influenza *precisely as if they were the same disease,* instead of treating each according to the principles of its peculiar pathology. Yet the analogy of treating *all* mental disorders following influenza as if they were of the same great family, when as a matter of fact they are of many sorts and species, does not impress some as analogous, which however it certainly is.

The first step in recognizing the effect of influenza on the human mind, then, is to recognize the fact demonstrated by detailed studies of the matter[2] that *all known forms* of mental disease may be evoked or emphasized by influenza. In a previous paper in this journal I presented the known forms of mental disease in a simple and easily grasped table, as prepared by E. E. Southard[3] of Boston, and modified by myself. This list of twelve

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[2] Jelliffe, S. E., Influenza and the Nervous System, Phil. Med. Journ., Dec. 27, 1902. Jelliffe, S. E. Psychoses with Influenza, N. Y. Med. J., 108,725 Oct. 26, 1918. Menninger, Karl A., Psychoses Associated with Influenza I. Statistical Analysis, Journal A. M. A. 72:235, Jan. 25, 1919. Menninger, Karl A., Psychoses Associated with Influenza II. Expository Analsyis, Archives Neurology and Psychiatry, II, p 291, Sept. 1919. Menninger, Karl A., Influenza and Neurosyphilis, Archives Internal Medicine, 24:98, July 1919. Burr; Mental Complications and Sequellae of Influenza, Med. Clin. of N. A., 2:709, Nov. 1918. Harris, Waterman and Folsom, and numerous others.

[3] Journ. A. M. A., October 19, 1919, and numerous others.

families, each with its minor subdivisions which it is the psychiatrists duty to elaborate, is quite within the grasp and ken of every general practitioner, and it is one of the aims of our Mental Hygiene movement that every medical man know at least this much about psychiatry. To review this list, it will be recalled that the diagnostic difficulties increase with the descent of the list, and the groups should be eliminated progressively and in order, from the top down. These are:

BRAIN SYPHILIS (neurosyphilis is a better term.).

FEEBLE MINDEDNESSES (note plural number.

EPILEPSIES (principally in the idiopathic form).

DRUG DISEASES (alcohol, morphin, etc.)

GROSS BRAIN LESSIONS)brain tumors, apoplexy, etc.)

DELIRIUMS (with and without fever).

MENTAL DISEASES OF OLD AGE.

SCHIZOPHRENIA (formerly called dementia praecox).

PARANOID PSYCHOSES (a group introduced here by myself).

MANIA AND MELANCHOLIA (often associated and closely related).

PSYCHONEUOROSES (hysteria, neuroses, etc.)

VAGUE AND UNCLASSIFIED FORMS (including psychopathy).

How, then, are each of these groups affected (produced, modified, etc.) by influenza? Can influenza cure morphinism? Does hysteria appear during or as a result of influenza? These are some of the questions which we purpose to consider systematically, in the order of the twelve groups.

BRAIN SYPHILIS, or Neurosyphilis. It has not been unusual to see cases with a history something like this. Until November 1 John Jones, aged 45, had always been considered an unusually well man. True, he had complained once or twice last summer of a headache or of mild fatigue, but such trivial symptoms were quite justifiably ignored. In November he had influenza although not particularly severely. His convalescence was uneventful, but shortly after he had regained his feet he was observed to be acting queerly. From this the story would go on in various ways, sometimes with sudden gross conduct disorder, sometimes with a continuation of minor eccentricities, sometimes with evidence of severe mental incompetence. These cases would come to the hospital and upon close examination neurological, psychiatric, and serological (blood and spinal fluid) would prove to be frank cases of brain syphilis (general paresis, et al.)

Another common observation was that of cases who for some months or even longer had been showing mild symptoms of something wrong, a something to which no one had applied a name, and in fact which often had caused no considerable concern. After influenza these symptoms would bloom out strongly and the unforutnate victim would present the picture of general paresis of a severe grade, with marked mental deterioration ("dementia"), etc.

Influenza may then precipitate full-fledged brain syphilis in previously (apparently) well persons, and augment it tremendously in those previously showing only slight signs.

FEEBLE MINDEDNESS. Influenza, unlike meningitis, scarlet fever, etc., is not likely to produce total loss of intellect, resulting in idiocy. If it does so at all, it is extremly rarely. On the other hand it does have a powerful effect on the brains of children already lacking in intellectual power. A number of interesting cases have been reported in which children rating perhaps as imbeciles, would be reduced by influenza to a mental ranking of idiots, or a corresponding reduction from "moronity" (high grade feeble-mindedness) to imbecility (middle grade feeble mindedness), and other cases in which imbeciles have developed psychosis.

EPILEPSY. Influenza has been accused by various writers (following the epidemcis of 1890, etc.) of producing or exciting epilepsy. Possibly such is the case, although I have never seen an instance of it

nor have any been reported for the past twenty-five years. It is more likely that influenza calls forth epileptic attacks in persons already possessing the epileptic tendnecy, which is virtually to say that they always had epilepsy. It is a truth well known to psychiatrists, although sounding somewhat paradoxical, that many epileptics never have convulsions. Influenza may precipitate them in some, however, and I have observed cases where influenza has entirely changed the nature of the attacks. In other cases it has increased the frequency of the attacks, in still others it has decreased them. We know so little about epilepsy, and so little about influenza that it behooves us not to draw any dogmatic conclusions about their interrelations.

DRUG DISEASES. This group deserves scant mention, now that alcohol is gone, and morphin going. There is this to say, however, influenza combines with any of the drugs that cause delirium and produces a chronic delirium which sometimes baffles attempts at solution.

GROSS BRAIN DISEASE. About one hundred years ago it was observed that influenza was sometimes followed even in young persons by apoplexy, a brain vascular lesion which is of course seen usually in middle aged or older adults. This was studied and found to be due to a brain hemorrhage or rather brain hemorrhages, as in addition to one large lesion producing clot there are usually many small bloody specks, like flea-bites, as Leichtenstern has suggested. Influenza has apparently corroded the blood vessel substance so that multiple diffuse hemorrhages occur, some of which are large enough to produce symptoms of apoplexy. Whether or not the recently discussed "sleeping sickness" or epidemic encephalitis lethargica is similar in causation is yet in dispute.

A few other forms of gross brain disease follow influenza, but this is by all means the most frequent and it is rare enough. I have presented one case in detail in a recent article.[4]

DELIRIUM. Delirium is the name that has been for hundreds of years applied to the transient mental disturbances accompanying bodily illness, particularly fevers. It has been extended, perhaps not correctly so, to mental disturbances of somewhat similar symptoms which follow the fevers, and gradually enlarged to include almost all mental diseases associated with obvious physical disease providing they get well in a reasonably short time.

Of course this is not very scientific, and there have been strenuous efforts on the part of some of the students of research in mental disease of late years to determine what delirium is, or at least upon just why it should be called delirium. For our purposes we may say that delirium is a familiar altho inaccurate and ill-defined word which means recoverable mental disease secondary to obvious physical disease.

All sorts of deliria accompanied the influenzal attacks in the recent epidemic. Some writers have stated that delirium was rarely seen. That is not true. It was not the rule, by any means, but it was very common, and I have personally seen many cases. One variety is the simple "mind wandering" which has been the theme of melodramatic stories, poems, etc. ("The Engineer's Last Ride," etc.) for decades. This is characterized by partial loss of consciousness, and the existence of a dreamy bewilderment, with fleeting visions and voices. It comes at all stages of the disease, before, early, late, and after. Another variety is simply a more severe form of the same thing, in which the patient's consciousness of his environment is more nearly entirely lost, and in which he is more vividly surrounded by an imaginary world, often terrifying and disturbing. In these cases the danger to avoid is a violent reaction of the patient to his hallucinations. He may spring from

[4] Menninger, Karl A., Psychosis Associated with Influenza. Archives of Neurology and Psychiatry v. II, pp 291-337, Sept. 1919.

his bed believing himself about to be murdered by beasts, and despite all ordinary precautions spring from the window or rush into the street. Sad accidents have thus occurred.

Another form of delirium is one frequently seen after the influenza is supposed to have subsided.

"Muttering delirium", "coma", and various others of the types seen in profound illness have been observed with influenza. They are usually seen only when the physical state of the patient is by all means the most urgent need of treatment, and hence do not merit discussion here.

Two forms of delirium seen after influenza, rather than during the attack, were peculiar and quite important. One was a form in which the patient wandered away during his convalescence, and either came to himself or was picked up at some distance from his home unaware of his whereabouts or the means of his getting there. I have suggested the name of "delirium errant" for this. Another type which I have called delirium schizophrenoides is one in which the diagnosis is very difficult. It strikes the examiner at first as a case of excited "dementia praecox" and the longer the case lasts, the more it looks like this, but suddenly it begins to recover and soon gets entirely, or almost entirely well.

The MENTAL DISEASES OF OLD AGE which constitute the next group are of course not frequently seen precipitated by influenza, chiefly, however, because of the comparative rarity with which influenza attacks the older people. Occasionally, however, cases of "senile dementia" and other forms of mental disease seen in elderly people appeared immediately or shortly after attacks of influenza.

The eighth group is the one of SCHIZOPHRENIA or dementia praecox, the disease of mental queerness. There is a long, sad story to tell in connection with this disease. It is one of which we do not know the cause or cure, and yet patients afflicted with it constitute approximately half of all the state hospital inmates in the United States, and in fact in the world! Now the curious thing is that it is by all means the most frequent mental disease group following influenza. This strange fact is not yet fully understood, but when it is considered that more cases of this form of mental disease followed influenza than all other forms put together in the recent series we studied in Boston, it will be seen that there would appear to be something more than an accidental or incidental relationship. It is possible, altho of this we are by no means convinced, that this disease is in some cases at least the indirect result of infectious disease, that is to say that it is the effect on the brain (mind) of some by-product of the action of some infection, of which certainly influenza would seem to be one. If this proves to be true, a great discovery in the science of mental disease will have been made, since it will probably point the way to an approach to successful curative treatment of this terrible disease. PARANOID PSYCHOSES may for the present be considered as part of this group.

The "circular folly", as it was once called, or the mania-melancholia group comes next. Some may wonder why these are thus grouped together, and I would explain that it is well recognized that true mania and true melancholia represent two different extremes of the perversion of the same faculty, the emotions or affections. Patients subject to one are likely to suffer from the other, as well, sooner or later, altho this does not always occur by any means. Now instances of the occurrence of mild depression after influenza are very common, and are known to practically every layman as well as physician. But true melancholia, or the psychiatric entity known as depression was found not to be so common as might be supposed. Nor were the excited states known as true mania very common. Both did occur, both in initial and repeated attacks, but they were rather unusual, nevertheless.

PSYCHONEUROSES are the diseases masquerading under such names as neurasthenia, hypochondriasis, hysteria, neuroses, shellshock, etc. They have been known to follow influenza for hundreds of years, and they may occur then for the first time in the patient's life. They were seen in great numbers after the recent epidemic, and in fact probably almost every practitioner in the country is treating or has knowledge of at least one such. They are extremely difficult to treat sucessfully, as will be dealt with in the next article, but fortunately the ultimate outlook is usually good. The commonest form is one of hypochondriasis, ,in which the patient is almost one big bundle of laments, complaints and rebukes. I had one such —a usually quite intelligent man, a teacher, bitterly denounced me for attempting to take a specimen of blood for a Wassermann test, saying that he would "surely bleed to death thru that needle and you will never be able to stop it."

The last group of all is a sort of a ragbag for the odds and ends and miscellanies that cannot be classified elsewhere. One form which some would place here is the sex-pervert and others with what was once called "moral insanity". These cases are so little understood that it is useless to discuss them statistically. I saw a few cases which seemed to have been precipitated by influenza, or at least led on to rather worse manifestations than usual. But on the whole we may simply say that this remains an odd and unsettled group, both inherently and in regard to the matter at present under consideration.

SUMMARY

To sum up this article then we find that influenza is a potent poison to the brain and to the nervous system in general. It evokes in some way mental diseases of every known variety, including representatives from all of the twelve major groups of the Southard classification. How it does this—whether by producing the mental disease directly as it sometimes seems to do, or by precipitating a latent psychosis as seems to be the case at other times, is not certain. Possibly it does both. At any rate brain syphilis, epilepsy, feeble-mindedness, coarse brain disease, drug disease, deliriums, senile mental diseases, schizophrenia, paranoid psychoses, mania and melancholia, psychoneuroses and representatives of a miscellaneous group have been observed in sequence to the grippe. Hence the effect of influenza on the brain cannot be thought of as a specific, and the result is apt to be any one of many forms of mental disease, but this propensity for the production of some mental trouble, mild or severe, transient or permanent, one sort or another, is one of the most striking characteristics of the terrible disease of which we have recently seen, unfortunately, too much.

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Fables for the Kansas Doctor

By RENNIG ADE

Once upon a time there was a Kansas Doctor practicing in a small town, making a living for himself and family and fairly contented. His age was 45, his weight 195 pounds, his habits good, and no life insurance company had ever turned him down after his note had been liberally discounted by his banker.

He played ball once a year at the Woodman Picnic when the Fats played the Leans. This was all the exercise he took except mowing half his yard every spring. A crippled colored man attended to it the rest of the season, and in return got a few bottles of the tonic from the five-gallon lactated pepsin jug and a regular supply of the "liver pills" known as Hinkle's which since the war have advanced over 9 cents per thousand.

At the outbreak of the Great War the Doctor like others of the profession joined the Medical Reserve Corps and immediately left for the city to buy a new uniform. The conscienceless, prepuceless profiteer, Cohen by name, who trafficked in war regalia, stung him three hundred dollars for a seventy-five-dollar outfit, but as it brought into relief the massive calves, and sort of held in abeyance the

42-inch waist line, the bargain was made and the home bank did the rest.

In time the call came, the farewell reception was held in the basement of the Methodist church where refreshments were served by the ladies and two violin solos were rendered by the daughter of the President of the Board of Trustees who had been taking lessons for almost a year and could play two or three pieces clear through. After some delay the wife and family were duly assembled, and all left for Ft. Riley.

The Doctor felt rather lonesome at first, as he was the only physician among 650 surgeons, but later in the day he became a surgeon also.

The officers' family quarters were not as he had been led to believe, and he was compelled to send the wife and four children back to her folks, who were tickled almost to death. Feeding ten-year-old boys 50-cent eggs and 65-cent bacon is one of the most laughable things in the world. Grandpa's pension almost kept them in butter.

The first three months of the Doctor's training were spent in running up hills, jumping hurdles, setting up, setting down, walking lame, and rolling over.

This was under the direct supervision of Major Pimple. The major swore beautifully and could smoke two packages of Camels in a day. He had no other qualifications.

After three months of this intensive training the Doctor was asked if he had a preference for any particular kind of work. Being pretty well fed up on the strenuous life, naturally of an inactive physical temperament, and not wishing to butt in ahead of more ambitious men, he expressed a preference for housemaid's knee and femoral hernias.

After considerable correspondence with the Housemaid's Knee Department at Washington, his request was turned down and he was sent to Camp Mills, N. Y., via Seattle, to administer typhoid vaccine to a bunch of three Indians who were expected in from New Mexico. Three weeks later he was ordered to Oglethorpe by the way of Camp Dodge. By steady traveling at 7 cents per, and getting help in fixing up his traveling vouchers, he managed to get enough ahead to pay his taxes and Woodman insurance, besides sending a little home to the family. His last long trip that paid pretty well was to Camp Cody, New Mexico, where he was sent to inspect a recently constructed latrine.

During all these trips he was not once embraced and kissed by a beautiful patriotic young lady of 19, as he had supposed would be one of the common horrors of war.

Word from home informed him of the locating of two new doctors in his town, and business good on account of the "flu."

Several months after the armistice was signed he was discharged from service, and went back to the old town to start in anew.

He hurriedly donned his civilian togs and packed the army clothes away in the lowest part of an obscure corner of the attic, and he was much pleased a few days later to see one of his colleagues who had been notoriously loyal in keeping the home fires burning, walking round attired in army shirt, puttees, etc., that had been taken in on a doctor bill from an indignent returned soldier.

A number of his friends asked if he had been out of town, as they had tried to get him on one or two occasions and central had said "the phone was out of order."

He reassembled his family, collected $3.75 fees turned over from brother practitioners, fished the cat out of the cistern where it had been for two months, made a first payment on a jitney, and gradually got back into the game again, mentally vowing that that man Sherman was a level-headed old boy.

Moral: There aint any.

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"Adverse personal criticism borne well is a sign of strength of character."

℞

Bad manners in practice is evidence of degeneration.

Comments and Excerpts—By The Prodigal

Team Work and the Polytechnic Medical Work Shop.

The late Dr. Williams of Cincinnati was a pioneer eye specialist of America. He is credited with the remark, "A Doctor has to destroy a bushel of eyes to become an occulist." The principle applied to the internist also in those days. There was more truth than fiction in the saying. The fiction only remains so far as opportunity is concerned. Hospitals and team work have changed educational methods and results. The community hospital is the polytechnic workshop of the medical man and the mecca of the medical student and nurse.

The auto and air craft annihilate space. With good earth roads and skyline boulevards unobstructed, a hospital a score of miles distant is on the doctors front lawn. Art and science have perfected the means and the way to get there. The signs of the times are coquetting the doctor on in numerous, better and more successful methods of serving and helping the sick man. The doctor with the pep accepts the challenge and governs himself accordingly. There is no question as to the good resulting to the community, the medical student, the nurse, the doctor and the profession at large, in team work and in a community hospital. To the community it is a Godsend to have a place near home where the continued fever cases can be sent and cared for properly; where all surgical cases can be treated scientifically; where the prospective mother can go for the accouchment a week before the expected confinement and get a few days rest before the ordeal of childbirth. The relief to the family from the care, labor, anxiety, and the uncertainty of carrying out the doctor's instructions and the liability to mistakes, each and all favor the community hospital. Aside from this, serious sickness in the home unfits the well members of the family for home duties and remunerative work. It is the medical student's haven to begin his life work near home with qualified teachers and working and familiarizing himself with the material and eccentricities of that elusive something called human life. Such an opportunity goes far toward easing up on his finance. The time it takes and the requirements to be fulfilled and the exactions imposed on the future graduate in medicine call for a big bank account, a long life, or the community hospital to grow up in.

An interne hospital experience being an essential requirement to graduate in medicine and there being not enough places to go around, there would be too many applicants on the waiting list without the community hospital. And by the time a young man would get through the medical college on the intership requirement, he would be too old to practice medicine. He would be so well educated that the whole brain substance would be a lump of gray matter. The community hospital is one way out to get theknowledge and be able to practice a few years after graduating.

It is the ideal place to school and fill the demand for nurses. The community hospital makes better mothers, in the sense of knowing how to care for those to be. To the half dozen or more community doctors doing the team work, the benefit to them professionally is invaluable. It is the nucleus or educational center from which radiates professional medical activity, strengthening all who come under its influence. It is a cure for that ennui or lack of interest in scientific medicine so often seen in the general internist a few years after graduation. Such an enterprise encourages friendship and is a panacea for petty jealousies by occupying the time and mind in self improvement and preparation for the work, the growth and success of the hospital.

The practice of medicine is a man's job. Team work enables the physician to do the work easier and better. Team work is the newer or readjusting method of practice.

Team work afforded by a community hospital relieves the congested medical centers and diffuses an intelligent rivalry

and betterment of the esprit de corps in the rural medical profession as a whole. It develops physicians and surgeons and prepares them to meet a world crisis without loss of time or months of training, in such an event.. The community hospital lessens the physical labor and exposure of the physician. It places no greater obligation on the individual doctor, but it divides his responsibility. It affords more practical help in cases of emergency. It keeps the doctor in a more plastic condition mentally to be moulded into the newer ways and trend of thought in methods of diagnosis, treatment and discoveries in disease. The doctor is enabled to live more like a human being than an owl. Such an allignment in hospital work lessens the doctor's night rides to a minimum and lets him sleep and keep himself in a condition to study and be better prepared for his work.

He is not troubled with insomnia listening for the door-bell or phone calling him in the wee small hours to see the typhoid patient he visited during the day. The interne allays the midnight fear of the sick one and there are no neurotic friends present to increase the fear of the aflicted one. It means a more strenuous mental life for the doctor. He has to get a double cinch on his works and has no time for self pity or jealousy of his neighbor.

Where there is a lack of hospital facilities, in a well settled community, at a center of a ten mile radius, one can be supported by a little education of the laity. The hospital should be begun on a small scale. A sightly location should be selected for the building, if none, then cleanliness, neatness, and system should be scrupulously carried out. And the Shibboleth should be "Watch Us Grow."

The business end comes first. This should be in the hands of one A. I. business man, a common sense attorney at law and an all round doctor. The staff of physicians should be advisory only. Canvas the community. Each doctor has his own patrons. Then call a public meeting in the different neighborhoods. The business man and attorney can do the most of the talking. Tell the people what is proposed to be done. Take them into consideration. Study the subject from every standpoint. The convenience to the people, the economy, doing away with the dread of the afflilcted one of going away from home and friends, of being among strangers and probably placed in a ward full of sick and distressed patients. Compare this condition with the home hospital, home doctor, with home nurses, with natural and fresh food to eat, a clean room, with pleasant surroundings and away from the noise and din of a big city or hospital. Where the longing to see home folks and friends can be gratified and the soothing voice and friendly face of the family doctor can be heard and seen daily and a staff of home physicians at their service on call. Such a condition and surroundings soothe the nerves and puts the mind of the sick one at ease. By way of digression we'll say that mental therapeutics is in the saddle. "A sick body is not infrequently the expression of a sick mind. In many instances, the removal of an autside influence has an important scientific value as a measure of treatment and has as pronounced physiologic action as the most potent pharmacopeial drug." Again, "Reassurance is often as comforting as opium and has fewer after effects."

If perchance the doctor is so situated that a hospital is near, he should become so useful to the management that he is missed on roll call. He may not leave as much money to spoil his children by living up to the best there is in him professionally, but it is by doing a little more for humanity than humanity does for us that makes the world better and happier and makes our own lives worth while and an excuse for, why we live.

The community hospital will not interfere with any other hospital that is worth while. There are enough sick people to support a local hospital and the population is increasing daily. Not only that, but it is due the community and it is becoming fashionable. It is a sensible fash-

ion. It is an economical, practical and humanitarian one.

The old order of teaching and practicing medicine and caring for the sick is being revolutionized—readjusted. The bad things in it are being eliminated. The good things continued and the newer and better things are being grafted on to the teaching, practice, care and treatment of the sick. In other words the dawn of reason is breaking in medicine.

MR. EDITOR: You called the attention of the medical profession of Kansas to "Our Library," the Stormont Medical Library, in the last number of this journal and gave a suggestion, "how to get it before the medical men that it might be used more." Since the journal reaches the majority of the doctors of the state, one way to acquaint the profession with the contents of this library would be to get the catalogue of the library and publish a section or more of it each month. The title of the books first and then the periodical until the whole catalogue is published. Or put out an enlarged number of the Journal with the title of the books and the next number containing the title of the periodicals. It would get it to the profession quicker and with less cost to the society.

A private library is an index of a man's linancial or intellectual ability. The use he makes of it is the measuring stick by which he is gauged in the profession. A large percentage of the medical literature put out is more verbiage. And there is such a great amount of it that it is bewildering. As you suggest Mr. Editor, "it requires someone who is competent and painstaking and sufficiently interested to do the work." He should be financially disinterested in any particular publication.

After this competent man has made a selection of books or periodicals, his selection should be reviewed by three competent practitioners to make sure, doubly sure, in perfecting the menu. The profession of Kansas is favored by such a library; but like all gifts, it appears to be valued at the cost to us.

Continue your propaganda. You are headed the right way and while we older ones cannot be moulded anew the younger men may be made to see our sin of omission and govern themselves accordingly.

Your comment on "Prevention of the Recurrence of Epidemic Influenza" is timely. The method of prevention in some sections of our country is questionable, compelling the people who were well to wear masks. Fresh air is essential to maintain health. The power of resistance to disease depends upon the vital energy, else everybody would be sick or dead. Rebreathing ones own breath is as poisonous and deleterious to health as to breath anothers breath. Re-breathing stale breath, which has been held in the meshes of the gauze until the effete matter in it has time to rot, will make a well man sick; or breathing fresh air is a myth and there is no such thing as self poisoning from foul air. If the sick or suspected sick ones must mingle with the crowd mask them while they mingle. Make masking compulsory with them. It is a mistake to muzzle and scare everybody and depress them until they sicken. Give the well ones a chance to keep well by breathing fresh air.

———R———

While not generally known it is a fact that during the nineteen months of our participation in the war with Germany the casualties from accidents in peaceful America were more than twice as great as the casualties among the American troops in France. The statistics of the United States Census show that more than 70,000 persons died each year as the result of accidents in America. It is estimated that 20,000 of these deaths are caused by industrial accidents and 50,000 by accidents in the streets and homes.

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A little girl in Clay Center told her playmate that Dr. Morgan brought them a new baby. "Oh," said the playmate, "We take from him too."

THE JOURNAL
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W. E. McVEY, M.D. - - Editor

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Clinical Evidence

We are coming to appreciate the unreliability of clinical evidence, at least, in so far as it is applied to establish the therapeutic efficiency of remedial measures. We do not accept with unrestricted confidence the results of experimental therapeutics, particularly the experimental therapeutics conducted in the laboratory upon various kinds of animals.

The profession has long since learned to look with suspicion upon such clinical reports as would at one time have occasioned a largely increased demand for some new compound or proprietary preparation. We would perhaps question the mental equillibrium of one who should proclaim that fifty years of clinical experience had convinced him that an infinitessimal dose of sodium sulphate repeated every two or three hours would cure cases of asthma of many years duration.

Before we had been told a little about the nature and causes of anaphylaxis, and before it had been suggested that certain cases of asthma were probably of that nature, a suggestion that regularly administered small doses of egg albumen would cure some of them, would have met with equal ridicule—just as would the suggestion that hay-fever might be cured by the injection of pollen extracts.

No laboratory experiment would be likely to show any physiologic effect upon animals from such an infinitessimal amount of sodium sulphate as that mentioned, nor from very small amounts of egg albumen. Nor would such minute doses of sodium sulphate, or of egg albumen, produce any perceptible physiologic effect upon a normal man.

We must recognize the fact that there are substances which produce no discernible effect upon men or animals in their normal states, but which in certain pathologic states do produce very pronounced effects. Otherwise we could not explain many of our most popular methods of treatment. Many of these are based upon theories which were evolved from the laboratory and confirmed by clinical evidence.

Some of our long established therapeutic remedies were established upon clinical evidence and their action explained upon plausible theories. Some of these theories were later proven by laboratory tests, some of them were found unreliable and a true explanation of the drug ultimately found.

From the studies of recent years have been evolved some very different conceptions of the nature and causes of certain types of disease, and some very plausible theories of treatment. These theories are mostly, however, dependent upon ultimate confirmation by clinical evidence. Up to this time the clinical evidence presented has been in too many instances, either too meager, too indefinite or too unreliable to be safely accepted.

One should not be accused of undue pessimism, who fails to find, in the reports that have so far appeared, sufficient clinical evidence of the therapeutic efficiency of the treatment of asthma, even though its relation to anaphylaxis has been satisfactorily shown. Clinical reports on hay-fever for the present season are not yet available, but from observation one is not inclined to be enthusiastic over the re-

sults of treatment. Now that the nature and causes of these conditions or diseases have been established it is to be expected that some efficient plane of treatment will ultimately be perfected. Whatever these may be their efficiency must ultimately be confirmed by clinical evidence.

Clinical reports become evidence only when they go to establish a definite relation of cause and effect.

Perhaps the most prolific field for unreliable clinical evidence is in the treatment of pneumonia. The large list of remedies which have at some time been reported as near specifics in the treatment of this disease is sufficient proof of that statement. It was always later demonstrated that these very optimistic clinical reports were valueless as clinical evidence.

Dr. Bone reports that he has treated a hundred cases of pneumonia with quinine, or digitalis, or veratrum, or creosote, or serologic therapy, and that the mortality was nil, he has presented no clinical evidence of the therapeutic efficiency of the remedy he has used.

A few years ago one might have thought that nowhere but in the treatment of pneumonia could clinical reports be so readily come by, and definite data of real clinical importance be obtained with such difficulty. At the present time one might say this of influenza. Although conditions seemed most favorable for the accumulation of valuable clinical data, the reports were so conflicting and opinions so diverse that the profession is still unprepared for a possible recurrence of the epidemic. Even in the matter of prophylaxis, although opportunities for comparative tests could hardly have been more satisfactory, those most competent to observe and most competent to draw conclusions do not agree. Rosenow and Sturdevant conclude from their observations in prophylactic inoculation that 'It appears from all of the facts at hand that by the use of a properly prepared vaccine it is possible to rob influenza of some of its terrors." McCoy concludes from his observations of the use of prophylactic vaccine against influenza, in the Public Health Service, that "The general impression gained from uncontrolled use of vaccines is that they are of value in the prevention of influenza; but, in every case in which vaccines have been tried under perfectly controlled conditions, they have failed to influence in a definite manner either the morbidity or the mortality." Clinical reports were abundant but they failed to show that definite and constant relation of cause and effect required to evidence the prophylactic value of vaccine in influenza.

From a few facts we elaborate some ponderous theories and search the universe for additional facts to establish these theories, but in the search overlook the truth. We are too tenancious of our theories, perhaps, even in our clinical investigations. We see those evidences which go to prove our theories of medication, with a much keener vision than those which disprove them.

Who's to Blame?

One of the very important services rendered by the State School of Medicine to the people and the medical profession has been discontinued, at least temporarily, on account of lack of funds. While the government appropriated funds for the campaign against venereal disease those funds were available only to the extent of similar appropriations made by the state. Since the legislature failed to make any appropriation for this purpose the funds appropriated by the government are not available. Since the budget for the medical school did not include the maintenance of a laboratory for free examinations for syphilis and gonorrhea this work had to be discontinued. We have recently been informed that a sufficient fund had been appropriated by the Board of Administration and that the laboratory would be in operation again by October 1st.

Last year the cost of this laboratory was $7,000, but this year the demand for its service has greatly increased. We are informed by the Dean that during the month of August there were made 740

free Wassermann tests and 1,080 free examinations of smears from gonorrheal suspects. If the Wassermann tests are counted at $5.00 each, the minimum laboratory price, and the examinations of smears at $2.50 each, it means that the people of Kansas were saved $6,400 in one month by this one department of the medical school.

It is needless to say that the discontinuance of these free examinations by the state will most seriously handicap the work which has fairly begun in the control of venereal diseases. Naturally the last legislature is held responsible for this on account of its failure to appropriate the necessary funds. We must all share this responsibility, however, for we were rather indifferent in the matter ourselves. Those who attempted to secure the needed appropriation were apparently incapable of presenting essential facts and convincing data. It is a rare body of men that would have the temerity to ignore matters of such vital interest to the public as this, if properly made known to them. The members of the legislature are men of a fair degree of intelligence, and an ordinary amount of integrity, and at any rate, they hold the confidence of their friends and neighbors. They do sometimes submerge their personal and political interests in the larger problems of the public welfare. We do not believe that these men would betray the confidence of their constituents by refusing to provide the funds for so important a public work as this, if they were convinced that the purpose for which such funds were to be expended were legitimate and properly designed to promote the campaign against venereal diseases.

———R———

Enforcement of the Harrison Law

It was apparently intended, when the Harrison law was passed, that much in the medical use of narcotics should be left to the discretion of physicians. But, because there are in our profession as in all others those of too easy conscience and too greedy purse, this discretion is constantly being restricted. One of the recent Treasury Decisions includes the following paragraph:

"The act of December 17, 1914, as amended by the act of February 24, 1919, permits the furnishing of narcotic drugs by means of prescriptions issued by a practitioner for legitimate medical uses, but the Supreme Court has held that an order for morphine issued to an habitual user thereof, not in the course of professional treatment in an attempted cure of the habit, but for the purpose of providing the user with morphine sufficient to keep him comfortable by maintaining his customary use, is not a prescription within the meaning and intent of the act. (*U. S. v. Doremus*, No. 367, October term, 1918, T. D. 2809.)"

This decision leaves very little to the discretion of the physician in the management of addicts, at least. There is some reason to believe, however, that a physician's judgment will be respected to such extent as his reputation for ability and conscientiousness will justify. One should bear in mind that in using his discretion he also assumes the responsibility and should be prepared to defend his action and his judgment should occasion require.

From a pamphlet of instructions sent to collectors of internal revenue by Commissioner Roper we quote the following recommendations which will give some idea of the latitude of discretion permitted a physician:

"In the administration of this important law many emergency cases will doubtless be presented to you calling for immediate and practical solution. You will be called upon by practitioners and druggists, and importuned by addicts to answer their questions. It is obvious that no inflexible rule can be announced covering all specific cases which may arise.

"Extraordinary cases which can not be decided by the collector should be at once submitted to the Bureau with a full and accurate statement of material facts involved. In view of the emergency already precipitated in certain districts the following suggestions, which are subject to modifications through further interpretation of the law by the courts, are submitted:

"With reference to persons suffering from a *proven incurable disease, such as*

cancer, advanced tuberculosis, and other diseases well recognized as coming within this class, the reputable physician directly in charge of bona fide patients suffering from such disease may, in the course of his professional practice, and strictly for legitimate medical purposes, prescribe narcotic drugs for the immediate needs of such patients, provided said patients are personally attended by the physician and that he regulates the dosage himself. The prescriptions in such cases should bear the indorsement of the attending physician to the effect that the drug is to be dispensed to his patient in the treatment of an incurable disease.

"Such bona fide cases of incurable disease should not occasion difficulty in the proper administration of the law, and the fact that the patient suffering from such incurable disease is addicted to the use of narcotic drugs should not complicate the matter. In this class of cases, as well as in others hereinafter mentioned, caution should be exercised to avoid being imposed upon by unscrupulous persons, and too much credence should not be given to the unsupported statements of the addict himself, because the confirmed addict will go far beyond the truth in an attempt to secure an ample supply of narcotic drugs with which to satisfy his cravings.

"The primary responsibility obviously rests upon the physician in charge of the case. The Bureau manifestly is not charged with the duty of laying down any fixed rule as to the furnishing of drugs or the frequency of the prescriptions in any particular case involving an incurable disease. The danger of supplying persons suffering from incurable diseases with a supply of narcotics must be borne in mind, because such patients may use the narcotics wrongfully, either by taking excessive quantities or by disposing of a portion of the drugs in their possession to other addicts or persons not lawfully entitled thereto.

"While the primary responsibility rests upon the physician in charge, a corresponding liability also rests upon the druggist who knowingly fills an improper prescription or order whereby an addict is supplied with narcotics merely for the purpose of satisfying his addiction.

"Cases will come to your attention where aged and infirm addicts suffering from *senility, or the infirmities attendant upon old age,* and who are confirmed addicts of years standing, will, in the opinion of a reputable physician in charge, require a *minimum amount of narcotics in order to sustain life.* In such cases prescriptions to meet the absolute needs of the patient may be written and filled without involving a criminal intent to violate the law. Even in these cases every reasonable precaution should be exercised to prevent the aged and infirm addict becoming the innocent means whereby unauthorized persons may engage in the illicit use and traffic in these habit-forming drugs. Prescriptions in this class of cases should bear the indorsement of a reputable physician to the effect that the patient is aged and infirm, giving age, and certifying that the drug is necessary to sustain life.

"One of the principal difficulties in administering this law will arise in the case of the ordinary addict who is neither aged or infirm nor suffering from an incurable disease. *Mere addiction alone is not recognized as an incurable disease.* It is well established that the ordinary case of addiction yields to proper treatment, and that addicts can be taken off the drug and when otherwise physically restored and strengthened in will power will remain permanently cured. The average addict does not believe this, and it is symptomatic with him to have a fear and distrust of any treatment or cure. Wherever the occasion presents itself, the hope of successful treatment should be instilled in the minds of the unfortunates addicted to this terrible habit.

"The law as construed by the Supreme Court holds it to be a crime for any person, including practitioners, to furnish an addict with narcotics for the mere purpose of satisfying his cravings for the drug. The enforcement of this law as thus construed presents a problem attended with serious difficulties.

"Care should be exercised by investigating and field officers of this Bureau not to interfere with or harrass the reputable physician, who, in the course of his professional practice and for legitimate medical purposes only, is in good faith treating a bona fide patient for the cure of addiction, nor the official representative of the local authorities who is administering narcotics to addicts in a proper manner to meet their immediate needs to prevent collapse. At the same time it must be understood that the so-called reductive ambulatory treatment does not meet with the approbation of the Bureau for the obvious reason that where narcotics are furnished to an addict who controls the dosage himself he will not be benefited or cured, and

in many cases he may, by deceiving or importuning a number of doctors, secure a supply for peddling purposes."

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American Made Synthetic Drugs

P. N. Leech, W. Rabak and A. H. Clark report on the work which was done in the A. N. A. Chemical Laboratory in the efforts to overcome the shortage of synthetic drugs during the recent war. In particular they report on the examination of and the establishment of standards for procaine (novocaine), barbital (veronal), phenetidyl-acetphenetidin (holocaine) and cinchophen, or phenylcinchoninic acid (atophan), manufactured under Federal Trade Commission licenses. They report that the shortage of German synthetics was not felt seriously in most cases because the demand for them had been artificially created, and that the few which were in great need are being rapidly replaced by American made drugs. The report explains how the Federal Trade Commission granted licenses to American firms for the manufacture of German synthetics which were protected by U. S. patents, and how these licenses were issued only after an examination of the firm's product in the Association's Chemical Laboratory had demonstrated that its quality was satisfactory and equal to that of the drug formerly imported from Germany. It is interesting to observe, the report declares, that of all the synthetic drugs imported into this country from Germany and on which American patents had been issued, the demand was sufficient only to make it commercially profitable to manufacture four of them on a commercial scale, namely, arsphenamine (and neoaraphenamine), barbital (and barbital sodium), cinchophen and procaine. The chemists caution that, in view of the agitation to found an institute for co-operative research as an aid to the American drug industry, it will be well for the American medical profession to be on its guard against new and enthusiastic propaganda on the part of those engaged in the laudable enterprise of promoting American Chemical industry (Jour. A. M. A., Sept. 6, 1919, p. 754).

Benzyl Benzoate

Although the benzyl esters have been known only a short time in medicine, the possibilities of their usefulness in certain fields of practice is becoming apparent. Benzyl benzoate has already been accepted for New and Nonofficial Remedies. The therapeutic applicability of benzyl asters arose from the investigation of opium alkaloids by D. I. Macht. The study demonstrated that opium alkaloids may be divided into two classes: the pyridin-phenanthrene group, of which morphine is the type, and the benzyl-isoquinolin group, to which papaverin belongs. The former was found to stimulate contractions of unstriped muscles, whereas the papaverin-like alkaloids inhibit the contractions and lower the muscle tone. A search for simpler, non-narcotic compounds of the latter which might still act in inhibitory manner on smooth mulculature led to the use of benzyl acetate and benzyl benzoate. Ureteral colic and excessive intestinal peristalsis have been found to yield to the tonus lowering action of these two drugs. Apparently satisfactory results from the use of benzyl benzoate in dysmenorrhea have recently been reported (Jour. A. M. A., Sept. 6, 1919, p. 770).

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A. P. H. A. to Meet in New Orleans

The next annual meeting of the American Public Health Association is to be held at New Orleans, Louisiana, October 27-30 inclusive. The central themes of discussion will be Southern health problems, including malaria, typhoid fever, hookworm, soil pollution and the privy, etc.

The general belief among the health profession is that influenza will return next winter, and a full session will therefore be devoted to this subject for the purpose of developing methods of control.

A special effort has been made to arrange the program to meet the practical needs of health officials. Accordingly there will be discussion on such questions

as the attitude of legislators towards public health, the obtaining of appropriations, co-operation from women's clubs, health organizations, etc., the organization of health centers, and so on.

The programs of the sections will, as usual, deal with public health administration, vital statistics, sanitary engineering, laboratory methods, industrial hygiene, sociology and food and drugs.

Two special programs will also be presented on various phases of child hygiene and personal hygiene.

Winter railroad rates to New Orleans will be in effect from all points after October 1.

The program of the meetings will be published in the American Journal of Public Health appearing October 5 or may at that time be had upon application to the Secretary, 169 Massachusetts Avenue, Boston, Massachusetts.

BOOKS.

The Health Officer.

By Frank Overton, M. D., D. P. H., Sanitary Supervisor, N. Y. State Department of Health and Willard J. Denno, M. D., D. P. H., Medical Director of the Standard Oil Company. Octavo of 512 pages with 51 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, $4.50 net.

The author says, "This book contains the information which the average health officer must have in order to discharge his duties." There are five hundred pages of it and it contains a great deal of interesting information. It is needless to say a great many health officers would be more efficient if they knew all this book contains. The health officer himself is made the subject for some very comprehensive statements. "A health officer is a public educator, and his success will depend largely in his ability to make the public understand the reasons for his acts and advice." "He will be active in medcial societies and will take every occasion to promote good fellowship among physicians." "He is a combination of health commissioner, medical expert, clerk, plumbing inspector, legal adviser, and chief of the sanitary police."

The author is, perhaps, a little more positive in his treatise on influenza than are the contributors to the current literature of today. He says, "Influenza and the grippe are terms that are applied loosely to any form of acute respiratory disease that is not evidently pneumonia, but they very properly refer only to the sickness that is produced by the influenza bacillus."

Very careful attention is given to epidemiology and the rules to be laid down for the control of the routes of infection are explicit and should be efficient. The author takes an exteremely common-sense attitude in the chapter on venereal disease. He does not agree with those ultra-moralists who would proscribe all prophylactic measures against these diseases.

Don Quixote of Psychiatry

By Victor Robinson. 340 pages with 30 illustrations. Published by the Historical-Medical Press, 206 Broadway, New York.

This is a sort of a biographical sketch of a man who, if we are willing to accept the author's version of his life, hardly meets the requirements for an historical character. The story, however, is rather pleasingly told in spite of the fact that the author so frequently forgets his subject in recounting the antecedents, lives and characters of the men at various times associated with him. We are told that Dr. Clevenger, the subject of the sketch, after trying every vocation that seemed to offer an opportunity for work, finally determined to study medicine. He entered the Chicago Medical College and at this point in the biography the author gives us the early history of Chicago, the life of Dr. Brainard and the early history of Rush, and all the men connected with the school, the break, and the founding of the Chicago Medical College, then the life sketches of the men connected with this school, together with the dirty politics and boodling politicians infesting Chicago at the time. In all this the name of Clevenger occasionally appears, incidently, perhaps, and occasionally as a sort of a connecting link between separated facts and fancies. One

gets the impression that the author has taken Dr. Clevenger simply as an excuse to write something, and though he rather grudgingly gives him credit for considerable ability as a psychiatrist, makes up for the concession by very freely airing his faults and deficiencies.

In spite of its hap-hazard construction, the reader will find quite enough to make a fairly entertaining evening's reading. There will be nothing new to those who were at all familiar with Chicago's early medical history, nor to those who can recall the newspaper accounts of its scandalous politics. Not many, however, will accept his uncomplimentary opinions of many of the most learned and accomplished men in American medicine.

Practical Medicine Series

Series 1919, comprising eight volumes on the year's progress in medicine and surgery, under general editorial charge of Charles L. Mix, A. M., M. D., Chicago. VOL. II—GENERAL SURGERY, edited by Albert J. Ochsner, M. D., F. R. M. S., L. L. D., F. A C. S., Major, M. R. C., U. S. A., etc. Price of the volume, $2.50; price of the series, $10.00. Published by the Year Book Ppblishers, 304 Dearborn St., Chicago.

This volume covers such advances as have been made during the preceding year, in the whole field of surgery. It is especially interesting because of the material which has been produced by the surgeons who worked with the allied armies. It has of course been necessary to present the facts set forth with such conciseness as is possible. Those who have been adding the Year Book to their libraries each year will find reason to congratulate themselves on receiving this volume.

The Medical Clinics of North America

Volume III, Number 1. (The Chicago Number, July 1919.) Octavo of 277 pages, 59 illustrations. Philadelphia and London; W. B. Saunders Company, 1919. Published Bi-Monthly; Price, per year: Paper, $10.00; Cloth, $14.00.

The Chicago number of the Medical Clinics of North America (July 1919) probably presents a greater variety and number of subjects than any number yet published. There are some very interesting clinics and some very admirable short articles.

The clinic by Ralph C. Hammil includes a case of cerebral lues to be differentiated from encephalitis lethargica, neurologic findings in a case of ethmoiditis, and a consideration of the causes of apprehension. The latter furnishes material for a considerable discussion of the subject. A clinic by Williamson includes a case of gout which is discussed in all its details.

Sansum presents a very readable and a very instructive paper on the treatment of constipation.

We have mentioned only a few of the articles in this number of the clinics and perhaps not the most interesting, but these alone are worth the price of the volume.

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The Surgical Clinics of Chicago

Volume III, Number 4, (August, 1919.) Octavo of 227 pages 116 illustrations. Philadelphia and London; W. B. Saunders Company, 1919. Published Bi-Monthly; Price, per year: Paper, $10.00; Cloth, $14.00.

The most prominent feature in the Surgical Clinics of Chicago, August, 1919, is a series of clinics by surgeons connected with General Hospital No. 28, Ft. Sheridan.

Among these we not particularly the clinic by Major Nesselrode in which he describes the closure of cranial defects by osteoperiosteal grafts taken from the tibia, and a tibial transplant for ununited fracture. These reports are excellently illustrated. Besides the clinic by Nesselrode ther are in this group clinics by Dean Lewis, Phemister, Ryerson, Pollock, Norris and Reich. Bevan has a clinical report in the August number which includes a case of brain tumor, a case of multilocular cystadenoma of the liver and a case with an epithelioma of the lower lip. There are also clinics by A. J. Ochsner, Eisendrath, Davis, Meyer and Moncrieff, McKenna, Kretschmer, Moorehead, Speed, E. H. Oschner, Gatewood, McWorter and Reed.

———R———

The man who gets easy money pays the biggest price.

SOCIETY NOTES.

NORTHEAST KANSAS MEDICAL SOCIETY

Notice has just been received from the Secretary that the Northeast Kansas Medical Society will meet in Atchison on October 30. The program is not yet complete but we are assured that those who attend will be well repaid for their time and trouble. The officers are: President, H. L. Charles, Atchison; Vice-President, C. H. Koentz, Onaga; Secretary-Treasurer, J. L. Everhardy, Leavenworth.

GOLDEN BELT SOCIETY

The quarterly meeting of the Golden Belt Society was held in Manhattan, at the Kansas State Agricultural College, on Thursday, October 2. The following papers were presented: :

"Some Dietary Problems in Febrile Conditions," Elizabeth Rothermell, Associate Professor of Foods, Economics and Nutrition, K. S. A. C.

Subject not given, Dr. J. D. Riddell, Salina, Kansas.

"Clinical Syndromes Involving the Thymus," (with lantern slides), Dr. G. H. Hoxie, Kansas City, Missouri.

"Iritis," Dr. Geo. H. Ross, Manhattan, Kansas.

"Vesical Calculi," Dr. Alfred O'Donnell, Ellsworth, Kansas.

HARVEY COUNTY MEDICAL SOCIETY.

The Harvey County Medical Society met with Dr. R. S. Haury Monday evening, October 6, following a supper at Murphy's. Thirteen doctors were present.

Dr. J. T. Axtell read a paper upon the subject of "Hospitals, Religious, Municipal and Private." He stated that hospitals made for better work as physicians became more competent by team work, by association and by better equipment. The paper urged the building of good hospitals in every good town or county of the State. He approved of churches building and conducting hospitals, but where this could not be done, the county should build the hospital under the State Law. If both these should fall, doctors and business men should get together and build private hospitals. The education of nurses would be a great factor in promoting the public welfare in the protection of children, school inspection, efficient public health service, insuring pure food, safe milk, pure drinking water and better sanitation.

The subject of Dr. Haury's paper was "Abdominal Operations under Local Anaesthesia." Dr. Haury advanced the opinion that more operations will be done under local anaesthesia when the surgeons make themselves more proficient in the proper methods of using it. He claimed for it greater convenience, comfort and safety for the patient.

A general discussion of both papers followed. After an informal discussion of the use of vaccines for the prevention or cure of influenza or "flu" the following resolution was unanimously adopted:

"Whereas, The use of vaccines for the prevention or cure of influenza is not recommended by the United States Public Health Service, and that in the present state of our knowledge is not proven to be beneficial; therefore, be it

"Resolved, That the Harvey County Medical Society does not endorse their use."—FRANK L. ABBEY, Sec.

FINNEY COUNTY SOCIETY.

The physicians and surgeons of Garden City met on September 19 for the purpose of organizing the Finney County Medical Society with the following charter members: Drs. S. Stevens, S. Bailey, J. B. Edwards, W. J. Stilson, Chas. Rewerts, Oliver Minor, R. E. Gray, T. F. Blanke, A. R. Knapp, W. R. Mitchell and R. M. Troup.

A committee on Constitution and By-Laws and a committee on Program were appointed.

The following officers were elected: President, W. J. Stilson; Vice-President, Chas. Rewerts; Secretary, R. M. Troup; Treasurer, T. F. Blanke.

Application has been made to the Kanass Medical Society for a charter.

Influenza Warning

Even though the re-occurence of influenza this fall is still a matter of opinion, it behooves us all to be prepared in every way to crush the very first evidences of another epidemic, Thorough prophylactic measures should be put widely in force everywhere with the first case which appears. Only in this way can we prevent its rapid spread and consequent suffering.

Probably the greatest prophylactic measure developed during the last epidemic was Dakin's remarkable antiseptic, Dichloramine-T. Previous investigations by military medical men had demonstrated its power to prevent infectious diseases originating in the upper air passages, such as meningitis, diphtheria, etc., and had shown its ability to clean up diphtheria carriers.

Its use as a spray to the nose and throat to prevent influenza was therefore perfectly logical. Thousands of people, in some cases the entire working force of large industrial plants, received sprays twice daily to nose and throat of a two per cent solution of Dichloramine-T in Chlorcosane. Also they were instructed to use a gargle Chlorazene, Abbott, 0.25% solution every two hours and before entering street cars or other public places.

The results were gratifying. Wherever these measures were carried out the incidence of influenza was unusually small. Further information on the uses of Dichloramine-T and Chlorazene may be obtained upon request to The Abbott Laboratories, Chicago, Illinois.

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Proper Storage of Biologicals

One of the most important features in the sale and distribution of biological products is the proper storage of serums and vaccines between the time of final test and shipment to customers.

In addition to the large cold storage capacity at the Glenolden Laboratories for the preservation of biological stocks, ample provision has been made for the maintenance of suitable temperature for biological products in the new Mulford building, Philadelphia, which is being occupied as quickly as conditions will permit.

Two large rooms have been constructed for unfinished and finished stocks, with a capacity of 50,000 cubic feet, in which a minimum low temperature will be maintained. Small vestibule apertures connecting with the foreign and domestic departments permit the delivery of stock without opening the door and affecting the temperature.

Within the finished stock room is a compartment especially designed for the storage of smallpox vaccine, in which a temperature of about 25 degrees F. is maintained.

It has always been the aim of the Mulford Company to deliver biologicals to its distributors in perfect condition, so that if placed immediately in the refrigerator when received by the druggist, ideal results may be expected from their use.

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Government Wants Workers in Venereal Disease Campaign

The recently created Interdepartmental Social Hygiene Board of the United States Government is in need of a number of specially trained men and women to complete its organization. The United States Civil Service Commission has announced examinations for the following positions: Chief of division for scientific research, $3,500 to $4,500 a year; chief of division for educational research and development, $3,500 to $4,500 a year; educational assistant, $2,800 to $3,600 a year; chief of division of relations with States, $3,500 to $4,500 a year; chief of division of records, information and planning, $3,500 to $4,500 a year; supervising assistant and inspector, $2,800 to $3,600 a year; field agent, $1,800 to $3,000 a year. All positions are open to both men and women.

Applications for these positions will not be given scholastic tests in an examination room, but will be rated upon their education, experience, and writings. Published writings of which the applicant is the author will be submitted with the application. For most of the positions a thesis

on one of a number of given subjects will be accepted in lieu of published writings. The receipt of applications will close on November 4. Detailed information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or from the secretary of the United States Civil Service Board at the post office or custom house in any of 3,000 cities.

The law creating the Interdepartmental Social Hygiene Board provides for the cooperation of the War and Navy Departments and the Public Health Service of the Treasury Department for the prevention, control, and treatment of venereal diseases. The duties of the Board as set forth in the act are (1) to recommend rules and regulations for the expenditure of moneys allotted to States for the use of their respective boards or departments of health in the prevention, control, and treatment of venereal diseases; (2) to select universities, colleges, or other suitable institutions which shall receive allotments for scientific research for the purpose of discovering more effective medical measures for the prevention and treatment of venereal diseases; (3) to recommend such general measures as will promote correlation and efficiency in carrying out the purposes of the act; and (4) to direct the expenditure of certain moneys appropriated by the act.

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The Uses of Yeast

Yeast is one of those remedies that have undergone alternating cycles of use and of disuse. Just at present it appears again to be in its ascendency. Recently renewed attention has been called to its laxative qualities. The much debated question whether yeast can be used as a food, can be answered in the affirmative. However, in view of its laxative action, the amount of yeast which can be ingested is limited. Also, owing to its high nuclein content it is contraindicated in gout. As a source of water soluble growth promoting as well as antineuritic vitamin, yeast has become thoroughly established. However, as common foods contain this vitamin, there is little likelihood of its proving of therapeutic value, since it promotes growth only when stunting is due to lack of vitamins. Yeast has been used as an application in acne, for infected wounds and in leukorrhea. Recently the curative value of the oral administration of yeast in various cutaneous disorders has been reasserted. (Jour. A. M. A., August 23, 1919, p. 628.)

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A Cheese

Some cheese! If you don't believe it here are the facts, for it is the largest cheese in the world, and it was made for Armour and Company, Chicago::

Weight, 31,964 pounds.
Height, 8 feet.
Diameter, 10 1-2 feet.
Circumference, 33 feet.
Value, $16,000.
Weight of container, 8,000 pounds.
Milk used, 357,500 pounds.
Salt used, 800 pounds.
Rennet used, 1,251 ounces.

Three bandage cloths used, valued at $260 each measuring 33 feet long and 16 feet wide.

Factories furnishing the curds, 59.
Made by 73 cheese makers and helpers.
Value of cheese factories about $400,000.
Milk taken from 12,000 cows on 1,800 farms.

This cheese, larger than any ever attempted before, was made to be exhibited by Armour and Company at the National Dairy Show to be held at the International Amphitheatre October 6 to 12th, 1919.

So big and unique is this huge cheese that motion pictures have been taken by two large film companies, which will circulate the pictures of the world's largest cheese throughout the world as well as the process of manufacture.

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Third Survey of Hospitals

The third survey of hospitals being made under the auspices of the American Medical Association is now well under way. Through an extensive correspondence and a third questionnaire the Association has

collected a mass of information on the subject. Much of this material has been tabulated and forwarded to committees in each state representing the state medical associations. Most of the state committees have arranged definite lines of action and by inspection of the hospitals or by other methods are securing first hand information by which the data collected by the Association is being carefully checked. The immediate end sought is to provide a reliable list of hospitals which are in position to furnish a satisfactory intern training. The investigation is not limited to intern hospitals, however, but will cover all institutions and the data obtained will be useful in any future action which may be taken in classifying hospitals. The work in Kansas is in charge of a committee the members of which are Dr. J. L. Moorhead, Dr. H. L. Snyder and Dr. Geo. M. Gray. The closer relationship which the hospital now bears to the public in the community which it serves makes it all the more important that the service rendered by it shall be excellent in character.

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Physicians Wanted for Epidemic

The following circular letter has been sent out from the office of the State Board of Health. We are informed that about fifty have signified their willingness to serve in case services are required, but a much larger number will probably be needed:

"Dear Doctor: During the epidemic of influenza last winter there were many communities absolutely lacking in medical attendance. In collaboration with the U. S. Public Health Service we tried to remedy this by securing a list of doctors willing to help where needed.

"This year, as a matter of preparation, we are asked to secure a similar list of physicians willing to be at the call of the U. S. Public Health Service for special duty in influenza cases, it being understood that they are to be used in this state and as far as possible in their own community. The terms are $200 per month salary, plus $4 per diem subsistence, and actual traveling expenses.

"In last year's pandemic there was terrible need of physicians for this service. Kansas doctors responded, to the best of their ability, to our call for help. So many men were absent in army and navy service, however, that the response was necessarily limited. Now that you younger men have come back again to home fields, we expect to be better supplied.

"Please let us know, by return mail, if we may put your name on our list of volunteers to fight influenza under the conditions and terms named above. Fraternally, S. J. CRUMBINE, M.D.,

"Collaborating Epidemiologist,
U. S. P. H. S."

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Tuberculous Infection of Rabbits After Experimental Artificial Pneumothorax

In an endeavor to obtain tuberculosis of only one lung, F. W. Shaw of the William Volker Research Laboratory, Kansas City, first performed artificial pneumothorax of one side in rabbits and then infected the animals both intravenously and intratracheally. The author was surprised to find that visible tubercle developed only in the collapsed lung, while the functioning lung was apparently spared. He things that his experiments show that the collapsed lung is not a defense against the tubercle bacillus.—American Review of Tuberculosis.

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In the page advertisement of the Gilliland Laboratories, of Ambler, Penn., in our September issue, the price of 1,000 units of Diphtheria Antitoxin was printed $0.75. If this was capable of being misunderstood, this notice is intended to correct such misunderstanding. The price of 1,000 units is 75c.

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The Oldest Irish Joke

Pat was down and out. He concluded to commit suicide. Later he was found dangling in the air with the rope around his body. A passer by asked him what he was doing. "Faith an I'm committan suicide." "You can't do it that way, Pat. Put the rope around your neck," said the passer by. "Indade," says Pat," I tried it that way but I couldn't breathe."